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ABSTRACT

This student manual contains guidelines for keeping the Cornell Farm Account Book. The manual is divided into the following fifteen units of instruction: (1) Why Keep Records?, (2) Operating Expenses, (3) Labor Records, (4) Interest and Debt Payments, (5) Capital Purchases and Improvements, (6) Milk Sales, (7) Crop Sales, (8) Livestock Sold, (9) Miscellaneous Receipts, (10) Summary of Farm Operating Expenses, (11) Summary of Farm Inventory and Farm Net Worth, (12) Calculation of Depreciation, (13) Summary of Farm Receipts and Expenses, (14) Labor Requirements for Livestock and Crops and the Farm Business Chart, and (15) Electronic Accounting Programs. Each unit of instruction is divided into four sections: unit objectives, introductory information and questions, procedures, and sample entries. (LRA)

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# Guidelines for Keeping the Cornell Farm Account Book

**Student Manual**

By Dale J. Paterson

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## Objectives

At the completion of this unit, the student will be able to:

1. List five reasons for keeping accurate and up-to-date farm records.
2. Make the decision to keep farm records when given the opportunity.

## Why keep records?

Picture two farms: although of similar size and resources, they differ in production and profit. One is successful; the other is just making it or falling further behind each year. The main reason for the differing rates of success is **management.** Management is the ability to make good use of one's resources — money, labor, machinery, animals, and land.

What provides the basis for sound management decisions? Farm records, past experience, and knowledge provide the manager a basis for making decisions. If you have ten cows and a few pieces of machinery, you might not need records. However, an average farm may have $100,000 to $200,000 in assets, and some farms have an investment of $1,000,000 or more. These farms need a **record keeping system** to keep track of everything. It would be impossible to keep track of all your machinery, livestock, labor, and money without records. The farm records that should be kept are inventory and depreciation, cash account, field records, and production records on livestock and crops. Most successful farmers have a record keeping system to back up their management decisions, and you should have one, too.



## What is needed to determine—

1. Pounds of milk produced per year by each cow?

   _____

2. Farm income?

   _____

3. Social Security payments?

   _____

4. Taxable income?

   _____

For number one, **production records** are necessary. For the second, you need **accounting records** and at least two years' inventories. In each case, to determine information that every farm owner must know, **records** are needed.

We have already hit upon three reasons for keeping farm records: governmental regulation (Social Security payments and income tax); providing a complete financial picture of the business (farm income and taxable income); and determining the strong or weak points of the business (production per animal, yield per acre). List as many additional reasons as you can for keeping farm records.

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

# Unit 1

# Why Keep Records?

# Unit 1

# Why Keep Records?

## What record keeping system to use?

A variety of record books and record keeping systems are available to the farmer. One option especially popular in New York State is the *Cornell Farm Account Book*. It was prepared so the farmer would have an organized, complete book for recording all expenses and receipts connected with the farm.

This manual provides **guidelines** for recording information in the *Cornell Farm Account Book*. Each unit provides step-by-step instructions for completing forms and also explains new concepts and terminology. (An appendix on the last page lists and defines all new terms.) Take your time to complete each unit neatly, accurately, and fully. This manual can serve as a useful reference in the years ahead. Remember: Good record keeping is a key to success in any business.

Take a look at the "Contents." Note that the units fall into the following sections:

- units 2–5: how to record **expenses,**
- units 6–9: how to record **receipts** (income),
- units 10–14: how to determine and record **total production** and 'take home' **income**
- unit 15: **alternative methods** of record keeping.

No matter what record keeping system you use, the information and terminology presented in this manual will help you keep good records.

## Objectives

At the completion of this unit, the student will be able to:

1. Identify operating expenses from a list of farm business transactions.
2. Correctly enter farm operating expenses in the *Cornell Farm Account Book*.

## Operating expenses: Where the money goes

A **farm operating expense** (or noncapital expense) is the cost of an item purchased *for the farm business* that has an expected useful life of less than one year. Items that have an initial cost of less than $100, such as nonpower hand tools, are also included as operating expenses. Write down five expenses that would fit the definition of farm operating expense.

1. _____

2. _____

3. _____

4. _____

5. _____

Would you classify the purchase of a claw hammer as an operating expense? YES or NO

Place an **X** before each item that is an operating expense.

| | Item | Amount | Quantity |
|---|---|---|---|
| _____ | fuel | $ 85.00 | 170 gallons |
| _____ | salt | 3.90 | 100 lbs. |
| _____ | plow | 1,400.00 | 1 |
| _____ | dairy supplies | 5.50 | |
| _____ | tractor repair | 23.80 | |
| _____ | cement blocks | 675.00 | 1,800 blocks |
| _____ | feed | 36.40 | 400 lbs. |
| _____ | drainage tile | 273.00 | 1,000 feet |
| _____ | fence pliers | 14.00 | 1 pair |

Some operating expenses are shared by the farm and the household. Examples are electricity, telephone, and automobile expenses. As these expenses are paid during the year, the **total** amounts are entered in the *Farm Account Book*. At the end of the year, the total for each expense is adjusted to eliminate the personal share (the household share).

Suggested classifications of farm operating expenses are given on the back cover of the *Cornell Farm Account Book* and on page 6 of this unit to help you classify sample entries. Read and understand **all** procedures and ground rules before making any entries. Always use **pencil** when making entries in records.

# Unit 2

# Operating Expenses

# Unit 2

# Operating Expenses

## How to enter operating expenses

1. For each expense, enter the month and day that **payment** was made.
2. If an item was purchased in quantity, write down the number or amount purchased in the column titled *Quantity.*
3. In the column titled *Kind of expense,* write a brief description of no more than three or four words of the expense and to whom the money was paid. For example:

   tractor repair–Disbrow
   diesel fuel–Agway
   stove bolts–Smith's Hardware
4. The cost of each item is recorded in column 1.
5. Classify the expense and enter the amount in the appropriate column (2 through 20). (Thus, each expense is entered twice: in column 1 and one other.) For example: purchased alfalfa seed would be entered in columns 1 and 12, "Seeds and plants." For help in classifying entries, refer to the Suggested Classification page.
6. Follow steps 1 through 5 for each of the sample entries.
7. Enter only **farm** operating expenses in this workbook. Household or personal expenses should not be entered since they are **not** farm business expenses.
8. In the case of electricity, telephone, and auto expenses (which are used by both the farm business and the household), enter the **full amount** of the expense in the correct column. At the end of the year, the personal share of these expenses will be deducted. These adjustments are discussed in Unit 10, *Summary of Farm Operating Expenses,* beginning on page 35.*
9. Enter each column's total for the year.
10. Add the values for columns 2 through 20 and enter the figure in column 1. This data will be forwarded to the summary in Unit 10.

FARM OPERATING EXPENSES (Continued)

| Month Day | Quantity | Kind of expense | 1 Enter all items in this column | 2 Feed bought | 3 Feed bought | 4 Machine hire | 5 Truck, tractor and other machine expense | 6 Auto expense | 7 Gasoline and oil | 8 Breeding fees |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total this month or to date brought forward* | | | | | | | | |
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# Unit 2

# Operating Expenses

## Sample entries

| Date | Description | Amount | Quantity |
|---|---|---|---|
| 2/3 | Dairy concentrate (Agway) | $375.00 | 6,000 lbs. |
| 2/3 | Diesel fuel (Agway) | $150.00 | 300 gal. |
| 2/5 | Truck repair (Smith) | $ 70.00 | |
| 2/6 | Spreader chain links (Smith) | $ 5.00 | |
| 2/8 | Town and county tax | $360.00 | |
| 2/10 | Breeding fee (EAIC) | $ 25.00 | |
| 2/11 | Telephone (N.Y. Telephone) | $ 23.00 | |
| 2/15 | Electricity (Niagara Mohawk) | $143.00 | |
| 2/17 | Hacksaw blades (Smith) | $ 8.00 | |
| 2/20 | Truck insurance (Agway) | $ 37.00 | |
| 2/21 | Alfalfa seed (Agway) | $ 55.00 | 30 lbs. |
| 2/25 | Gasoline (Agway) | $200.00 | 350 gal. |

**Year end total for each column**

| Column | Total | Column | Total |
|---|---|---|---|
| 1 | Sum 2–20 | | |
| 2 | $16,800 | 12 | $1,200 |
| 3 | 100 | 13 | 2,000 |
| 4 | 0 | 14 | 800 |
| 5 | 3,000 | 15 | 1,700 |
| 6 | 600 | 16 | 1,000 |
| 7 | 1,800 | 17 | 1,500 |
| 8 | 900 | 18 | 1,000 |
| 9 | 940 | 19 | 0 |
| 10 | 300 | 20 | 1,000 |
| 11 | 2,500 | | |

FARM OPERATING EXPENSES

| 9 Veterinary and medicine | 10 Other livestock expense | 11 Lime and fertilizer | 12 Seeds and plants | 13 Spray and other crop expense | 14 Land, building, and fence repair | 15 Taxes | 16 Insurance | 17 Electricity | 18 Telephone | 19 | 20 Miscellaneous |
|---|---|---|---|---|---|---|---|---|---|---|---|
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# Unit 2

# Operating Expenses

## Suggested classification of farm expenses

This classification of farm expenses into a few broad groupings can be of help to you in two ways: (1) it suggests groupings that you can use from year to year and thus make valid comparisons with other years, and (2) it is a check list of items to prevent overlooking some expenses before closing your book for the year.

**Columns 2 and 3 Feed bought**

*Dairy farms:*

*Column 2 Concentrate*

Antibiotics
Grains
Minerals
Mixed feed
Molasses
Processing
Starters
Supplements
Vitamins

*Column 3 Non-concentrates*

Hay
Green-chop
Silage

*Livestock farms:*

Separate feed expenses for various kinds of livestock

**Column 4 Machine hire**

Custom work
Grain drying
Machine rental
Spreading lime & fertilizer
Tiling
Trucking

**Column 5 Truck, tractor and other machine expense**

Antifreeze
Chains
Equip. repairs
Parts
Small tools
Tires
Tractor repairs
Truck repairs
Truck registration
Welding

**Column 6 Auto expense**

Antifreeze
Chains
Gasoline
Grease
Insurance
Oil
Registration
Repairs
Service
Tires

**Column 7 Gasoline and oil**

Gasoline
Grease
Oil

**Column 8 Breeding fees**

Breeding fees
Breeding supplies
Semen

**Column 9 Veterinary & medicine**

Medicines
Vaccines
Veterinary fees
Veterinary supplies

**Column 10 Other livestock expense**

Bedding
Breed assoc. dues
Dairy supplies
DHIC dues & fees
Milk house supplies
Milk house fuel
Registration & transfers
Washing materials
Water
Whitewash

**Column 11 Lime and fertilizer**

Include cost of materials only, enter spreading under machine hire.

**Column 12 Seeds and plants**
Inoculation
Plants
Seeds
Seed treatment

**Column 13 Spray & other crop expense**
Bees expense
Certification
Crop containers
Fungicides
Herbicides
Insecticides
Harvest supplies
Planting supplies
Maple enterprise sup.
Twine and wire
Storage
Enter cost of custom application under machine hire.

**Column 14 Land, building & fence expense**
Building repairs
Cement
Drainage repair
Electrical repair
Ground maintenance
Roofing
Water systems rep.

**Column 15 Taxes**
Farm real estate taxes, town, county and school.

**Column 16 Insurance**
Crop insurance
Farm liab. ins.
Fire insurance
Livestock ins.
Truck insurance
Workmen's compen.

**Column 17 Electricity**

**Column 18 Telephone**

**Column 20 Miscellaneous**
Accounting fees
Advertising
Cash rent
Consultant fees, farm business
Farm account books
Farm organization dues
Farm papers
Fuel, farm business
Legal fees, farm business
Office supplies
Travel, farm business
Freight

**Pages 44–47* Labor record**
Farm wages paid, gross & cash
Social Sec. withheld from employees
Social Security payments
Cash cost of board

**Page 48* Farm interest & debt payment**
Principal payments
Interest payments

**Page 49* Capital purchases & improvements**
*Machinery and equipment:*
New machinery and equipment
Farm share of auto and other vehicles
Major overhaul of machines

*Real estate:*
New buildings and land
Major remodeling
New fences and drains
Well drilling
Land clearing and development
Pond building
*Cattle and other livestock:*
Dairy cows, heifers, calves and bulls
Other livestock

**Page 52* Deductions from milk check**

*Page numbers refer to *Cornell Farm Account Book.*

# Unit 2

# Operating Expenses

# Unit 3

# Labor Records

## Objectives

At the completion of this unit, the student will be able to:

1. List at least five allowances that may be included in the total earnings of an employee.
2. Illustrate the relationships between total earnings, gross cash wage, allowances, deductions, and cash wage paid.
3. Correctly enter labor expenses in the appropriate sections of the *Cornell Farm Account Book*.
4. Correctly enter the monthly Social Security liability, and record the Social Security payments when given examples of each.
5. Correctly summarize the labor record section of the *Cornell Farm Account Book*.

## Labor records: Why keep them?

Labor costs are **operating expenses** paid for services rendered on the farm. But recording labor costs in the *Cornell Farm Account Book* is more than just recording the cash wage. One reason is that all of the employee's earnings are not necessarily cash. Can you think of items that might be partial payment for labor? Write down examples.

1. _____
2. _____
3. _____
4. _____
5. _____

The goods and services given to the worker by the farm business as partial payment of wages are called **allowances.** What you just noted are five allowances. Why is it necessary to keep a record of allowances?



The value of allowances is added to the cash wage when computing if an employee's wage exceeds the minimum wage, except for **paid** family labor. Minimum wage laws do not apply to paid family members under 21 years old.

An employee does not keep all of her/his cash wage. Part of the wage is held back by the employer or **deducted** from the employee's gross cash wage. What is the most common deduction? (See page 44 of the *Farm Account Book.)*

_____

Can you think of any others?

_____

_____

Goods and services that are **given** to a worker by the farm business as partial payment of wages are _____. Portions of a worker's wage that are *held back* by the employer are called _____. An _____ increases a worker's salary. A _____ decreases a worker's cash wage payment.

The labor costs are classified as either regular or seasonal. **Regular labor** is labor that is hired on a continuous basis throughout the year. It may be full or part-time. **Seasonal labor** is labor hired for a few days or weeks during the year when the work load is more than the regular labor force can handle. The labor section of the *Account Book* has separate sections for recording regular labor and seasonal labor.

Completing the labor section of the *Farm Account Book* at the end of the year does not complete your responsibilities as an employer. Year-end reports must be submitted to the government and to the employees. What reports might you be required to complete?

1. _____
2. _____
3. _____

# Unit 3

# Labor Records

The current Social Security regulations cover employees who "are paid by an employer **$150 or more** in cash wages during a calendar year, or who have worked for an employer on **twenty or more days** during a calendar year for cash pay on a time basis." This regulation affects whether Social Security deductions are made on seasonal labor costs. Check with your instructor to be sure these regulations have not changed.

By law, an accurate account of the hours an employee works must be kept. Although this is difficult on a farm because of variation in length of the working day from day to day and season to season, you must be as accurate as possible in recording the employee's number of hours worked each pay period. If accurate records are not kept by the employer, it is impossible to determine if the employee is receiving at least the minimum wage.

## How to enter labor expenses

1. Enter employee's name, address, and Social Security number. (Be sure to record regular hired labor and seasonal labor in their correct sections.)
2. Record all allowances that are to be part of the employee's total earnings. Adjust all allowances to a *per month* basis. (See employee descriptions.)
3. Enter the date that payment was made, total hours worked, and the gross wage paid in the proper columns.
4. Record the Social Security deduction for each pay period. To compute the deduction, multiply the gross cash wage by the Social Security percentage. (Use 6.13% unless instructed otherwise. Therefore, multiply .0613 by the gross cash wage.)
5. Enter the cash wage paid (net cash wage). The cash wage paid is the gross cash wage minus the Social Security deduction.
6. Follow this procedure (steps 3, 4, and 5) until all wage payments for the employee are recorded.
7. Compute the year's total gross cash wage, Social Security deduction, and cash wage paid. Note: In the sample, only *two months'* payments are recorded so they will not equal the year's total. Use sample entries to complete the *total for year.*
   a. Enter the total for year gross cash wage. (See sample entries.)
   b. Multiply the year's gross cash wage by the Social Security percentage to determine the year's total Social Security deduction. (Use 6.13% unless instructed otherwise.) Record this figure as *total for year.*
   c. To determine cash wage paid, subtract total Social Security deduction from gross cash wage. Enter the amount as **total for year.**

## Sample entries

**Employee descriptions:**

• Bill Jones is a full-time employee. His Social Security number is 132-47-6218, and his address is R.D. #2, Gallatin, N.Y. He lives in the tenant house on the farm with his wife and two children. He takes home two quarts of milk daily and receives a side of beef each year from an animal raised on the farm. Since his wife is not home during the day, Bill eats breakfast and lunch five days per week with the owner and his family. The meals and farm products that Bill receives are valued at current market prices toward his earnings. Use of the tenant house is also considered an allowance and valued at $100 per month with $50 per month in utilities. His weekly cash salary (gross cash wage) is $175.00

• Carol Smith is the owner's 16-year-old daughter. Her Social Security number is 592-65-6559. She works on the farm weekends and holidays throughout the year at $40 per weekend. During the summer she works full time and receives a cash wage of $100 per week. (Social Security is not paid on the employer's spouse or children under 21 years of age.)

• Laura Brown is a 15-year-old student who lives nearby. Her Social Security number is 084-32-4715, and her address is Box 312, Gallatin, N.Y. She does not work regularly on the farm but pitches in when the work load is heavy. (Therefore, she is classified as seasonal labor.) She receives the minimum wage on an hourly basis, with the exception of some piecework.

## Year's Data:

| Date | Description | Hours | Gross Wage |
|---|---|---|---|
| Jan. 7 | labor (Bill) | 56 | 175.00 |
| Jan. 7 | labor (Carol) | 20 | 40.00 |
| Jan. 14 | labor (Bill) | 55 | 175.00 |
| Jan. 14 | labor (Carol) | 20 | 40.00 |
| Jan. 21 | labor (Bill) | 58 | 175.00 |
| Jan. 21 | labor (Carol) | 20 | 40.00 |
| Jan. 28 | labor (Bill) | 51 | 175.00 |
| Jan. 28 | labor (Carol) | 19 | 40.00 |
| May 3 | labor (Bill) | 68 | 175.00 |
| May 3 | labor (Carol) | 68 | 100.00 |
| May 10 | labor (Bill) | 73 | 175.00 |
| May 10 | labor (Carol) | 73 | 100.00 |
| May 10 | labor (Laura) (haying) | 20 | 40.00 |
| May 17 | labor (Bill) | 76 | 175.00 |
| May 17 | labor (Carol) | 76 | 100.00 |
| May 24 | labor (Bill) | 75 | 175.00 |
| May 24 | labor (Carol) | 75 | 100.00 |
| May 24 | labor (Laura) (clipped 70 cows at $1.50/cow) | 30 | 105.00 |

**Total hours worked for the year**

| *Employee* | *Hours* |
|---|---|
| Bill | 2768 |
| Carol | 1436 |
| Laura | 398 |

**Total gross wage for the year**

*Employee*

Bill: weekly salary times 52 weeks

Carol: 12 weeks during the summer at $100 per week and 42 20-hour weekends/holiday periods at $40 each

Laura: $916

LABOR RECORD

REGULAR HIRED LABOR

Employee's name:

Address:

Social Security No.:

Allowances (enter if claimed as part of minimum wage).

| House | $ | Utilities | $ | Food (description and amount) | $ | Other Benefits | $ |
|---|---|---|---|---|---|---|---|
| Other lodging | $ | | $ | | $ | | $ |
| | $ | | $ | | $ | | |

| Date | Total hours worked | Gross cash wage | Deductions: Social* Security | Deductions: Other (describe) | Cash wage paid | Date | Total hours worked | Gross cash wage | Deductions: Social* Security | Deductions: Other (describe) | Cash wage paid |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $ | $ | $ | | Balance carried for. | | $ | $ | $ | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| Total to carry forward | | | | | | | | | | | |

*Enter employee's share in this column.

Total social security liability for this month — two times the amount withheld from all labor employed this month.

Total for year

# Unit 3

# Labor Records

11

# Unit 3

# Labor Records

**LABOR RECORD**

| REGULAR HIRED LABOR | Allowances (enter if claimed as part of minimum wage). | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Employee's name: | House | $ | Utilities | $ | Food (description and amount) | $ | Other Benefits | $ |
| Address: | Other lodging | $ | | $ | | $ | | $ |
| Social Security No.: | | $ | | $ | | $ | | $ |

| Date | Total hours worked | Gross cash wage | Deductions | | | | Cash wage paid | Date | Total hours worked | Gross cash wage | Deductions | | | | Cash wage paid |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Social* Security | | Other (describe) | | | | | | Social* Security | | Other (describe) | | |
| | | $ | $ | | | $ | $ | Balance carried for. | | $ | $ | | | $ | $ |
| | | | | | | | | | | | | | | | |
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| Total to carry forward | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| | | | | | | | | Total for year | | | | | | | |

*Enter employee's share in this column.
Total Social Security liability for this month = 2 times the amount withheld from all labor employed this month.

**LABOR RECORD**

| SEASONAL HIRED LABOR | Allowances (enter if claimed as part of minimum wage). | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Employee's name: | House | $ | Utilities | $ | Food (description and amount) | $ | Other benefits | $ |
| Address: | Other lodging | $ | | $ | | $ | | $ |
| Social Security No.: | | $ | | $ | | $ | | $ |

| Date | Total hours worked | Units produced | Gross cash wage | Deductions | | | Cash wage paid |
|---|---|---|---|---|---|---|---|
| | | | | Social Security* | Other (describe) | | |
| | | | $ | $ | | $ | $ |
| | | | | | | | |
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# How to complete the labor record

**Summary of wages paid**

1. Write on the summary in the spaces provided in the first column, the names of each regular hired employee and seasonal hired employee.
2. Forward to the summary the year's total *Cash wages paid* for each employee.
3. Total the column, and enter the figure as *Total cash wages paid.*
4. Forward the value of any meals (board) provided to an employee. Enter the figure under *Cash value of board furnished.*
5. For each employee, sum the cash wages paid and cash value of board furnished. Enter the sum as *Total.*
6. Sum the figures in the total column, and enter the amount as *total cash wages paid and value of board.* This figure will be forwarded to the Summary of Farm Operating Expenses, page 36.

Summary of Wages Paid

| Item | Cash wages paid | Cash value of board furnished | Total |
|---|---|---|---|
| Regular hired labor from page 11 | $ | $ | $ |
| from page 12 | | | |
| | | | |
| Seasonal hired labor from page 12 | | | |
| Total cash wages paid | | | |
| Total cash wages paid and value of board (page 36) | | | |

**Summary of Social Security liability and payments on labor**

This summary shows the total Social Security paid for all employees each month and total year. The amount paid is the employee's share (the Social Security deduction) plus the employer's share (an amount equal to the employee's Social Security deduction). To complete the summary, use the figures recorded on the Labor Record and given under the sample entries section that follows these procedures. Entries for January through March have been made. Complete the summary for April and May.

1. For each month, add the Social Security deductions for all employees. (For example: January is $42.92 [Bill] + 0 [Carol] + 0 [Laura] = $42.92.)
2. Since the employer pays an equal amount, **double** the monthly amount and enter it as *Total liability this month.* (For example: The total for January is 2 × $42.92 = $85.84.)
3. Add the *Total liability this month* to the *Balance brought forward.* Record the sum as *Balance to carry forward.*
4. Bring this balance forward to the next line.
5. When the balance reaches $200, the employer must pay the government. Record a $200 payment under *Payment made,* and write the date.
6. Subtract the payment amount from the balance and record what's left as *Balance to carry forward.* Carry it forward.
7. Compute the *Total Social Security paid this year.* (Add the total Social Security deductions for all employees, and double the amount.) This sum will be forwarded to page 36.

# Unit 3

# Labor Records

# Unit 3

# Labor Records

## Sample entries

Employee's Social Security deductions (must be **doubled** before recording in Summary of Wages Paid.)

January, see Labor Record
February, $42.92
March, $46.52
April, $48.61
May, see Labor Record
Total paid this year, see Labor Record

## Statement of wages

Each payday, every employee must be given a statement showing hours worked, rates paid, gross wage, allowances, deductions, and net wages. The following is an example of a wage statement. Complete the statement for Bill Jones for the pay period Sunday, January 7, through Saturday, January 13.

Summary of Social Security Liability and Payments on Labor

| | Month | Balance brought forward | Total liability this month | Payment made | date | Balance to carry forward |
|---|---|---|---|---|---|---|
| Enter balance due from last year. | | $ | $ | $ | | $ |
| Enter amount withheld plus your share of Social Security on all labor hired each month in total liability this month column. | | | | | | |
| Enter payments actually made this year including payment of last year's balance. | | | | | | |
| Make payment when balance reaches $200 and at year's end. | | | | | | |
| | | | | | | $ |

Total Social Security paid this year (page 36) $ Balance due on labor hired this year

### STATEMENT OF FARM WORKER EARNINGS

EMPLOYEE:_____ WORK PERIOD:_____ thru _____ 19___

Wage Rate $_____ per_____

Record of hours worked, and units if piece work:

| S | M | Tu | W | Th | F | S |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Total Hours for Period_____

**Allowances:** *(if considered as part of the wage)*

House or lodging . . . . . $_____
Electricity . . . . . $_____
Fuel . . . . . $_____
Meals _____ . . . . $_____
Milk _____ qts. . . . $_____
Eggs _____ doz. . . $_____
Other_____ $_____
_____ $_____
TOTAL ALLOWANCES $_____

**Wages paid:**

Net cash wages . . . . . $_____
Deductions:
Social Security . . . . . $_____
Other_____ $_____
_____ $_____
_____ $_____
Total deductions . . . . . $_____
GROSS CASH WAGES PAID . . . $_____
TOTAL ALLOWANCES . . . . . $_____
**TOTAL WAGES** . . . . . $_____

EMPLOYER:_____

# Unit 4

# Interest and Debt Payments

## Objectives

At the completion of this unit, the student will be able to:

1. Define the terms principal payment and interest charge.
2. Given an annual interest rate, compute the interest charge for monthly payments and quarterly payments.
3. Given the annual interest rate, the amount borrowed, and the installment schedule, compute the interest and principal payments for the first three installments under (a) the equal payment plan and (b) the decreasing payment plan.
4. Complete the Farm Interest and Debt Payments record using data provided and/or computed.
5. Given the appropriate information, compute an Annual Mortgage Statement.

## Borrowing money: Paying for its use

Most farms operating today could not function without borrowing money. Borrowing money is actually "renting" money. You must pay a fee (or rent) for its use. Therefore, the total amount of money repaid to the lending agency is the original amount borrowed *plus* the rental fee. The original amount borrowed is called the **principal payment.** The rental fee is called the **interest charge.** The interest is a *cost,* so it is recorded as an **operating expense.**

Complete the following statements: A loan installment consists of a payment toward the _____ of the loan plus an _____. The _____ is toward the original amount borrowed. The _____ is the rent paid for the use of the money.

Depending on the type of loan and loan agency, installment payments probably will be made monthly or quarterly (every three months). The interest rate is usually listed as a total per year (X%). If you are making monthly installments, interest is paid twelve times per year. Each month you pay 1/12 of the annual interest rate (X% ÷ 12). If you are making quarterly installment payments, interest is paid four times per year. Each quarter you pay interest at 1/4 of the annual interest rate (X% ÷ 4).

If you are making *monthly* payments on a $10,000 loan at 10% annual interest, what percent interest applies to *each installment?* _____ % monthly.

If you are making *quarterly* payments on a $10,000 loan at 8% annual interest, what percent interest applies to *each installment?* _____ % quarterly.

## Establishing repayment schedules

"**Amortization** is the repayment of a debt by installments which usually include payments on both the principal and the interest" (from *Principals of Agricultural Finance* by Lyle L. Wicks). Two basic amortization plans have been developed by the Federal Land Bank: the **decreasing payment plan** and the **equal payment plan** (or standard plan).

Under the decreasing payment plan, a **set portion** of the principal is paid on each installment date **plus** the interest charge on the **unpaid balance** of the principal. For example: a $25,000 loan may require that $400 per month be paid toward the principal plus an interest charge of 12% on the **unpaid** principal. Each month the unpaid principal decreases by $400; therefore, the interest charge also decreases. The name "decreasing payment plan" clearly describes how the monthly installments change in amount.

# Unit 4

# Interest and Debt Payments

For loan repayment using the equal payment plan, an **equal** amount is paid on each installment date. The **total amount** of the installment is set, as is the interest rate, but the amount of principal and interest **change** with each payment. For example: a $25,000 loan may require a monthly installment of $400 at 12% interest. An interest rate of 12% means that the monthly interest payment will be 1% of the unpaid principal. The first installment will include an interest payment of $250 (1% × $25,000). Since the installment is $400, $150 ($400 − $250) is applied toward the principal. The second installment will include an interest payment of $248.50 (1% × $24,850). How much of the $400 installment is applied toward the principal? _____. Note that the portion of the installment that is applied toward the principal **increases** with each payment.

## How to enter interest and debt payments

1. Under *description,* enter the name of the lending agency or type of loan (such as mortgage payment).
2. On the first line, enter the amount of the loan under *Balance* and the *Date* of the first installment.
3. Determine whether the repayment plan is decreasing payment or equal payment, and enter the payments as follows:

**a. Decreasing payment plan**

(1) Enter the *principal payment* figure in the proper column.
(2) Multiply the interest rate per installment by the balance to determine *interest payment.*
(3) Sum the principal payment and interest payment to determine the *total payment.*
(4) Subtract the principal payment from the balance and enter the amount on the next line.
(5) Repeat these steps for each installment date.

**b. Equal payment plan**

(1) Enter the *total payment* figure in the proper column.
(2) Multiply the interest rate per installment by the balance to determine the *interest payment.*
(3) Subtract the interest payment from the total payment to find the *principal payment.*
(4) Subtract the principal payment from the balance, and enter the amount on the next line.
(5) Repeat these steps for each installment date.

## Sample entries

**1. Decreasing Payment Plan**

Carl Katz took a $50,000 mortgage on his farm on January 1. Carl and the lending agency agreed upon a quarterly payment of $1,000 plus interest on the unpaid balance. The interest rate is 8% annually. Complete the year's record of interest and principal payments for this mortgage. (Hint: Installments are made 3/1, 6/1, 9/1, and 12/1.)

| Nature of Debt | | Payments | | | |
|---|---|---|---|---|---|
| Description | Balance | Date | Total payment | Principal payment | Interest payment |
| | $ | | $ | $ | $ |
| | | | | | |
| | | | | | |
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**2. Equal payment plan**

On January 1,. Martha Thomas took a $10,000 Production Credit Loan to purchase a tractor. Martha and the loan agency agreed on a monthly installment of $300, to be paid on the 15th of each month. The interest rate is 10% annually on the unpaid balance of the principal. Complete the record of all interest and principal payments for the first three months' installments. (Hint: Installments are made on 1/15, 2/15, 3/15. . . . Note that the first interest payment should be computed for one-half month.)

| Nature of Debt | | Payments | | | |
|---|---|---|---|---|---|
| Description | Balance | Date | Total payment | Principal payment | Interest payment |
| | $ | | $ | $ | $ |
| | | | | | |
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**3. The annual mortgage statement**

Interest and principal payments may be recorded on a monthly or quarterly basis. The standard practice for all lending agencies is to send the borrower a statement at the **end of the year** giving the year's total payments toward interest and principal. Given the following information, complete the Annual Mortgage Statement.

| | |
|---|---|
| Balance January 1 | $50,000 |
| Balance December 31 | $46,000 |
| Interest paid | $ 3,880 |
| Payments from escrow | 0 |
| Current quarterly payments | $ 1,000 plus interest on unpaid balance |

The year's total interest charge of $3,880 will be forwarded to the summary of Farm Operating Expenses, page 36.

## ANNUAL MORTGAGE STATEMENT —

| ACCOUNT NUMBER | MORTGAGE BALANCE JANUARY 1 | MORTGAGE BALANCE DECEMBER 31 | INTEREST PAID LAST YEAR | PAYMENTS FROM ESCROW DURING YEAR | | |
|---|---|---|---|---|---|---|
| | | | | TAXES | INSURANCE | OTHER |
| | | | | | | |

PLEASE REFER TO THIS ACCOUNT NUMBER IN ANY CORRESPONDENCE

IF THE ABOVE INFORMATION DOES NOT AGREE WITH YOUR RECORDS PLEASE CONTACT OUR AUDITOR

ESCROW → _____

PRINCIPAL AND INTEREST → _____

CURRENT QUARTERLY PAYMENT → _____

WHEN MAKING PAYMENT BY MAIL ALWAYS ENCLOSE YOUR PAYMENT COUPON

COUNTY TRUST COMPANY

NEW YORK



# Unit 4

# Interest and Debt Payments

## Objectives

At the completion of this unit, you will be able to:

1. Identify capital expenses when given a list of farm business expenses.
2. Classify capital expenses as either machinery and equipment, real estate, or cattle and other livestock expenses.
3. Correctly enter capital expenses in the Capital Purchases and Improvements section of the *Cornell Farm Account Book*.

## Farm capital expenses: How long will it last?

In Unit 2, operating expenses — items with an expected useful life of *less than one year* — were entered in the record book on the date purchased. Items that have an expected useful life of *more than one year* are called **capital expenses.** It would be inaccurate to charge their total cost to one year. Instead, a capital expense is shared by the years in which the item is used.

During the year, the total amount of each capital expense is recorded in the account book under Capital Purchases and Improvements when payment is made. At the end of the year after inventory is taken, the amount that machinery, equipment, and real estate have decreased in value can be computed. This amount is called annual depreciation.

**Depreciation** is the decrease in value of an item owing to causes such as wear, tear, and obsolescence (outdatedness). For example, when you buy a new car, as soon as it is driven from the car lot its value declines. Each year the car loses value until it has only salvage value. *The reduction in value each year is the annual depreciation.*

Remember: Capital expenses are items that have a useful life of **more than one year** and are charged to the farm business in the form of **annual depreciation** over their estimated useful life. Write five examples of capital expenses.

1. _____

2. _____

3. _____

4. _____

5. _____

Your examples should include items such as tractors, wagons, milking equipment, lumber, and cement. How do capital expenses and operating expenses differ?

1. _____

2. _____

Now that you know what capital expenses are and how they differ from operating expenses, place an X before each **capital expense** in the list below.

| | Expense | Amount |
|---|---|---|
| _____ | cinder blocks | $675.00 |
| _____ | cow | 580.00 |
| _____ | feed | 246.00 |

| | Expense | Amount |
|---|---|---|
| _____ | welding rods | $ 8.50 |
| _____ | water pump | 710.00 |
| _____ | shovel | 5.00 |
| _____ | oil | 20.00 |
| _____ | veterinarian | 127.00 |
| _____ | tractor | 20,000.00 |
| _____ | barn mats | 1,867.00 |



# Unit 5

# Capital Purchases and Improvements

# Unit 5

# Capital Purchases and Improvements

## How to record capital purchases and improvements

1. Before entering a capital expense in the record book, determine what type of capital expense it is: machinery and equipment, real estate, or cattle and livestock.
2. Refer to the following suggested classifications of capital purchases and improvements.

**Machinery and equipment:**

New machinery and equipment
Farm share of auto and other vehicles
Major overhaul of machines

**Real estate:**

New buildings and land
Major remodeling
New fences and drains
Well drilling
Pond building

**Cattle and other livestock:**

Dairy cows, heifers, calves and bulls
Other livestock

3. When a trade-in is included in the purchase of equipment, compute the **difference** between the cost of the new item and the value of the trade-in (known as "boot money"). Enter this difference in value as the cost of the new item.
4. Once the capital expense is classified, enter it in the proper column. Be sure to enter the *date* the item was purchased, a *description,* and the *cost.*
5. Soil and water conservation expenses may be classified as either an operating or a capital expense. As a rule, any **below ground expense** is considered a capital expense, and any other soil and water conservation expense is classified as an operating expense.
6. Enter the **total cost** for each classification at the bottom of each column: total machinery and equipment, total real estate, and total cattle and other livestock.

## Sample entries

Enter the following capital expenses in the Capital Purchases and Improvements section provided.

| Date | Description | Cost |
|---|---|---|
| 2/22 | cow (Lacy) | $ 580.00 |
| 2/27 | JD tractor $10,000 received $2,000 for IH tractor | |
| 3/12 | 2 cows | 1,020.00 |
| 4/1 | fuel tank | 120.00 |
| 4/1 | electric motor | 100.00 |
| 4/9 | self-unloading wagon | 3,500.00 |
| 4/22 | disc | 1,500.00 |
| 4/28 | new pole barn | 26,500.00 |

| Date | Description | Cost |
|---|---|---|
| 5/6 | exhaust fan | $ 120.00 |
| 5/11 | water pump | 700.00 |
| 6/21 | plow | 1,400.00 |
| 6/22 | cow #326 | 540.00 |
| 6/29 | lumber | 700.00 |
| 7/3 | cows (8) | 3,730.00 |
| 9/6 | cinder blocks | 800.00 |
| 9/13 | heifers (3) | 850.00 |
| 11/30 | springtooth harrow | 1,560.00 |

## CAPITAL PURCHASES AND IMPROVEMENTS

When capital items are purchased with credit or cash, enter the full amount contracted to pay when the transaction is made. If a trade is involved enter the amount contracted to pay or "boot money" rather than the list price of the new item.

| Machinery and Equipment | | | Real Estate | | | Cattle and Other Livestock | | |
|---|---|---|---|---|---|---|---|---|
| Date | Description | Cost | Date | Description | Cost | Date | Description | Cost |
| | | $ | | | $ | | | $ |
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| | | | | | | | | |
| Total machinery and equipment to page 39. | | $ | Total real estate to page 39 | | $ | Total cattle and other livestock to page 40 | | $ |

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# Unit 5

# Capital Purchases and Improvements



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# Unit 6

# Milk Sales

## Objectives

At the completion of this unit, the student will be able to:

1. Define the term receipt.
2. Name two expenses related to milk sales.
3. Correctly enter milk receipts and all related deductions from a monthly milk check in the Milk Sales section of the *Cornell Farm Account Book.*

## Income: Milk sales and related expenses

Up to this point, you have been working with farm **expenses.** This section of the account book is for recording cash flowing into the business, which is **receipts.** Anything sold from the farm is classified as a farm

---

The Milk Sales section differs from other sections of the *Farm Account Book* because you record both receipts and expenses on the same page. What expenses associated with selling milk would be entered on this page? (Name two.)

1. _____

2. _____

## How to record milk sales and milk check deductions

Refer to the milk receipts on page 25 and sample entries to complete the record of milk sales.

1. In the first four columns, enter the *month* the milk check is received at the farm, the *total pounds* of milk shipped, the average percent butterfat *(test)* of the milk shipped, and the *gross value of the milk.*
2. Under *hauling,* enter the amount the farmer is charged for trucking his/her milk from the farm to the processing plant.
3. Under *farm supplies purchased,* enter the cost of any dairy supplies purchased from the milk plant (such as strainer cloths, inflations, detergents, etc.).
4. If a farmer purchases insurance through the milk cooperative, the amount of the insurance premium is entered in the column titled *insurance compensation and farm business.* (Premium not purchased by J. R. Smith in following example.)
5. A portion of every farmer's milk check is retained by the milk cooperative to support advertising and milk promotion programs. Enter this deduction under *milk promotion.*
6. Farmers who are members of a milk cooperative must pay dues to the cooperative. The dues are deducted from the milk check. Enter the amount under *coop. dues expense.*
7. A farmer may choose to invest a portion of her/his earnings in the cooperative. Enter the amount deducted from the milk check for the investment certificates in the column titled *coop. investment certificates.* (Option not taken by J. R. Smith.)
8. Part of a farmer's milk check may be automatically transferred to other businesses or lending agencies to repay debts. This procedure saves the farmer from handling the transaction personally and gives the business or lending agency more assurance that the debt payment will be received. Enter deductions of this nature in the column titled *assignments and orders.*
9. Enter the cost of items purchased from the milk coop. or processing plant (such as cheese or butter) for use by the owner's family in the column titled *nonfarm purchases and deductions.*
10. Subtract the total amount of all deductions from the gross value of milk. This is the *amount of check* for the month.
11. Enter the *totals for the year* using the sample entries. These totals will be forwarded to summary pages in later units.

# Unit 6

# Milk Sales

## Sample entries

| Totals for the year | |
|---|---|
| Pounds of milk sold | 796,423 |
| Gross value of milk | $78,049.45 |
| **Operating expenses:** | |
| Hauling | $ 3,000.00 |
| Farm supplies | 400.00 |
| Milk promotion | 320.00 |
| Coop. dues expense | 550.00 |
| TOTAL Operating Expenses | $ 4,270.00 |

| **Investments and nonfarm expenses:** | |
|---|---|
| Coop. investment certificates | $ 25.00 |
| Assignments and orders | 3,600.00 |
| Nonfarm purchases | 100.00 |
| TOTAL Investments & Nonfarm Expenses | $ 3,725.00 |
| + | |
| TOTAL Operating Expenses | $ 4,270.00 |
| TOTAL Deductions this year | −$ 7,995.00 |
| TOTAL AMOUNT OF MILK CHECKS RECEIVED THIS YEAR | $70,054.45 |

MILK SALES

| Month | Pounds | Test | Gross value of milk | FARM OPERATING EXPENSES | | | | | Investments & Non-Farm Expenses | | | Other | Amount of check |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Hauling | Farm supplies purchased | Insurance compensation & farm bus. | Milk promotion | Coop dues expense | Coop Investment certificates | Assignments and orders | Non-Farm purchases & deductions | | |
| | | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| | | | | | | | | | | | | | |
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| Totals | | | | | | | | | | | | | |
| | To page 46 | | To page 48 | Operating expenses to page 36. | | | | | | | | | |

## HOGAN SOUHAN ALL STAR DAIRY

Name and Patron No J.R. Smith
Period Jan. 1 through Feb. 1
Lbs. Milk 51,800 Av. Test 3.5 %
N. Y. - N. J. Order Price Per Cwt. $ 9.60 Amount $ 4972.80
3.5% in 201-210 Mile Zone
B/F Diff. $_____ Per Cwt

| Base Value as above | Rate Per Cwt. | Amount |
|---|---|---|
| Additions | $ | $ |
| Butterfat Premium 3.5 or over | | |
| Butterfat under 3.5 | | |
| Location Differential 231-240 Mile | | |
| Other (describe) | | |
| | | |
| Gross Amount | | 4972.00 |
| Deductions | | |
| 3rd Party Orders: | | |
| National Bank | | |
| 1st National Bank, | | |
| Farmers Home Administrator | | 300.00 |
| Others | | |
| | | |
| Purchases Pipeline cleaner | | 25.00 |
| Butter | | 5.00 |
| Hauling | .45 | 233.10 |
| Cooperative Dues Amer. Dairy | | 40.00 |
| Eastern Milk | | |
| Advertising | | 26.00 |
| | | |
| Total Deductions | | 629.10 |
| Amount of check herewith | | $ 4343.70 |

## HOGAN SOUHAN ALL STAR DAIRY

Name and Patron No J.R. Smith
Period Feb. 1 through March 1
Lbs. Milk 54,200 Av. Test 3.6 %
N. Y. - N. J. Order Price Per Cwt. $ 9.65 Amount $ 5230.30
3.5% in 201-210 Mile Zone
B/F Diff. $_____ Per Cwt

| Base Value as above | Rate Per Cwt. | Amount |
|---|---|---|
| Additions | $ | $ |
| Butterfat Premium 3.5 or over | .30 | 162.60 |
| Butterfat under 3.5 | | |
| Location Differential 231-240 Mile | | |
| Other (describe) | | |
| | | |
| Gross Amount | | 5392.90 |
| Deductions | | |
| 3rd Party Orders: | | |
| National Bank | | |
| 1st National Bank, | | |
| Farmers Home Administrator | | 300.00 |
| Others | | |
| | | |
| Purchases Pipeline cleaner | | 25.00 |
| Butter | | 5.00 |
| Hauling | .45 | 243.90 |
| Cooperative Dues Amer. Dairy | | 40.00 |
| Eastern Milk | | |
| Advertising | | 27.00 |
| | | |
| Total Deductions | | 640.90 |
| Amount of check herewith | | $ 4752.00 |

# Unit 6

# Milk Sales



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# Unit 7

# Crop Sales

## Objectives

At the completion of this unit, the student will be able to:

1. Correctly enter all receipts from the *sale* of crops in the Crop Sales section of the *Cornell Farm Account Book*.
3. Use the remaining columns to itemize the sales of each crop. For example, in the first unlabeled column, write *Hay* at the top, and enter all hay sales in this column. Do the same for each additional type of crop sold.
4. Total all crop sales and enter this amount at the bottom of column one, *Total Crop Sales*.

## How to record crop sales

1. Crop sales are relatively simple to enter. They include the sale of cash crops, crops grown specifically for sale, and the sale of surplus crops.
2. When the money is received for the crops, enter the *date*, the *quantity* sold, a brief *description*, and, in column 1, the *amount* of the sale.

## Sample entries

| Date | Description | Amount |
|---|---|---|
| 1/15 | 16 bales of hay | $ 21.00 |
| 2/17 | 23 bales of hay | 31.00 |
| 3/19 | 29 bales of hay | 36.00 |
| 4/3 | 24 bales of hay | 30.00 |
| 4/6 | 32 bales of hay | 42.00 |
| 8/27 | 1/2 ton shelled corn | 54.00 |
| 10/18 | 50 bushels wheat | $194.00 |

**CROP SALES**

Enter all crop receipts including crop insurance proceeds in column one first. You may allocate crop sales to different kinds of crops by entering the receipt again under a more specific crop heading in another column.

| Date | Quantity | Description | 1 Enter all items in this column | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $ | | $ | | $ | | $ | | $ | | $ | | $ | |
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| | | Total Crop Sales | To column 1 page 42 | | | | | | | | | | | | | |



50

51

## Objectives

At the completion of this unit, the student will be able to:

1. Correctly enter livestock sales in the Livestock Sold section of the *Cornell Farm Account Book.*
2. Explain why sales of raised livestock are recorded separately from sales of purchased livestock.

## Income: Sales of purchased and raised livestock

Livestock that is sold off a farm can be grouped according to how you **acquire** the animal and what you **plan** to do with it. What would some of these categories be?

1. Example: Sales of raised livestock held primarily for sale.
2. _____
3. _____
4. _____

As you recall from Unit 1, one purpose for keeping accounting records is for filing income tax returns. This is the reason for classifying animals sold off the farm into several categories. Each column heading may be recorded in a different section of the state and federal income tax forms.

The column headings of *Livestock Sold* are the answers to the above question. Compare your answers with the column headings.



# Unit 8

# Livestock Sold

# Unit 8

# Livestock Sold

## How to record livestock sales

1. Determine the category for the animal sold.
2. In the proper column, enter the *date* of the sale, *description* of the animal(s), *number* sold, *price* received.
3. Make a **mark** (2+) to indicate if the animal was held two years or more. (This information is needed for filing income tax forms.)
4. When the full year's sales have been recorded, total the columns and enter the sum at the bottom of each page.
5. In the small box titled *Summary of Livestock Sales,* enter the totals for each column.
6. Compute the total livestock sales and record the amount.

## Sample entries

| Date Sold | Date born or purchased | Description | Number | Amount received |
|---|---|---|---|---|
| 1/13 | | calves | 2 | $120.00 |
| 1/19 | born 2/14/75 | Ruth #103 | 1 | 420.00 |
| 1/27 | born 5/3/74 | Hilda #412 | 1 | 400.00 |
| 2/5 | | calf | 1 | 70.00 |

**LIVESTOCK SOLD**

| Home-Raised Animals | | | | | Purchased Animals Sold | | | | | Calves | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Description | Number | Amount received | | Date | Description | Number | Amount received | | Date | Description | Number | Amount received | |
| | | | $ | | | | | $ | | | | | $ | |
| | | | | | | | | | | | | | | |
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| Totals | | | | | Totals | | | | | Totals | | | | |

# Unit 8

# Livestock Sold

| Date sold | Date born or purchased | Description | Number | Amount received | Date sold | Date born or purchased | Description | Number | Amount received |
|---|---|---|---|---|---|---|---|---|---|
| 2/11 | | calves | 3 | $180.00 | 8/26 | | calves | 3 | $195.00 |
| 3/21 | | calf | 1 | 75.00 | 9/9 | | calf | 1 | 70.00 |
| 3/22 | born 8/5/74 | Lucy #36 | 1 | 420.00 | 9/16 | | calf | 1 | 60.00 |
| 5/19 | born 7/16/76 | Gail #107 | 1 | 560.00 | 10/1 | | calves | 2 | 110.00 |
| 5/27 | | calf | 1 | 80.00 | 10/21 | | calf | 1 | 65.00 |
| 6/10 | | calves | 2 | 140.00 | 10/22 | | calf | 1 | 65.00 |
| 6/17 | | calf | 1 | 75.00 | 11/18 | | calves | 2 | 115.00 |
| 6/24 | | calves | 2 | 135.00 | 11/25 | | calves | 2 | 120.00 |
| 7/15 | | calves | 2 | 140.00 | 12/2 | purch. 3/4/77 | cow #316 | 1 | 650.00 |
| 7/30 | | calf | 1 | 75.00 | 12/9 | | calves | 2 | 115.00 |
| 8/12 | | calf | 1 | 80.00 | 12/23 | | calf | 1 | 60.00 |
| 8/20 | | calf | 1 | 80.00 | | | | | |

**LIVESTOCK SOLD**

| Calves | | | | | Sale of Livestock Held Primarily for Sale | | | | | Other Livestock (Include insurance from livestock lost.) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Description | Number | Amount received | | Date | Description | Number | Amount received | | Date | Description | Number | Amount received | |
| | | | $ | | | | | $ | | | | | $ | |
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| | | | | | | | | | | Totals | | | | |
| | | | | | | | | | | Summary of Livestock Sales | | | | |
| | | | | | | | | | | Home-Raised Animals | | | | |
| | | | | | | | | | | Purchased Animals Sold | | | | |
| | | | | | | | | | | Calves | | | | |
| | | | | | | | | | | Calves | | | | |
| | | | | | | | | | | Sale of Livestock Held Primarily for Sale | | | | |
| | | | | | | | | | | Other Livestock | | | | |
| Totals | | | | | Totals | | | | | Total Livestock Sales to page 42 | | | | |

# Unit 9

# Miscellaneous Receipts

## Objectives

At the completion of this unit, the student will be able to:

1. Correctly enter receipts from the farm business that do not fit the preceding categories of farm receipts (that is, crops, milk or livestock).
2. Correctly record an item as a capital or noncapital receipt.

## Cash receipts: The odds and ends

Thus far in the account book you have recorded income (receipts) from milk, crop, and livestock sales. Farm businesses receive money from other sources, although perhaps only once a year. Therefore, the *Cornell Farm Account Book* includes a section for recording *miscellaneous recipts.*

On a dairy farm, any receipt that is not from milk, crops, or livestock is entered in the Miscellaneous Receipt section. Can you think of any **farm** receipts to be entered in this section? Write them down.

1. _____

2. _____

3. _____

4. _____

Check your answers with the record on the next page.

It may be difficult to decide whether money received for farm work is a farm receipt or *personal* receipt. (Remember, only farm transactions are entered in the *Farm Account Book.*) As a general rule, any farm-related activity that occurs off the home farm and for which the owner receives money is considered a farm receipt. The amount is entered in the Miscellaneous Receipts section. Can you think of any off-farm work that the owner-operator may do and receive money for? List as many as you can.

1. _____

2. _____

3. _____

4. _____

Before recording receipts, they must be classified as capital or noncapital. Capital items are goods devoted to the production of other goods. Land, buildings, machinery, and equipment are capital items. Noncapital receipts include off-farm work, refunds, and dividends.

## How to record miscellaneous receipts

1. Determine whether the item is a capital or noncapital receipt.
2. Enter the receipt in the appropriate subheading. (For example: custom combining classified as a noncapital receipt would be entered in the section titled *work off farm.*)
3. Include the *date* the money was received, and a *description.*
4. After entering all the sample entries, total each section and enter the amount on the lines labeled *Total.* These totals will be used in later units to determine the income of the farm.

# Unit 9

# Miscellaneous Receipts

## Sample entries

| Date | Items | Amount received |
|---|---|---|
| 1/22 | Federal gas tax credit | $ 59.00 |
| 2/23 | Agway Coop. dividend | 3.00 |
| 2/27 | Sold semen for artificial insemination to EABC | 10.00 |
| 3/5 | Manure spreader | 150.00 |
| 5/26 | Plowing for Smith's farm | $100.00 |
| 7/1 | Agway Coop. dividend | 5.00 |
| 8/6 | State gas tax refund | 120.00 |
| 11/16 | Helped neighbor repair tractor | 30.00 |
| 11/30 | Springtooth harrow | 150.00 |

MISCELLANEOUS RECEIPTS

| Non-capital receipts | | | | Non-capital receipts (continued) | | | | Capital Items | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Items (kind and quantity) | Amount received | | Date | Items (kind and quantity) | Amount received | | Date | Items (kind and quantity) | Amount received | |
| | Refunds and dividends: | $ | | | Work off Farm: | $ | | | Land and buildings: | $ | |
| | Federal gas tax credit | | | | Machine work | | | | | | |
| | State gas tax refund | | | | | | | | | | |
| | | | | | | | | | | | |
| | Patronage dividends | | | | | | | | | | |
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| | | | | | | | | | | | |
| | Total to page 42 | | | | Total to page 42 | | | | Total to page 39 | | |
| | Government payments: | | | | Other | | | | Machinery & equipment: | | |
| | Conservation payments | | | | | | | | | | |
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| | Other | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | Total to page 42 | | | | Total to page 42 | | | | Total to page 39 | | |

# Unit 10

# Summary of Farm Operating Expenses

## Objectives

At the completion of this unit, the student will be able to:

1. Correctly forward all totals from previous operating expense sections to the summary.
2. State what is meant by farm share of auto, electricity, and telephone expenses.
3. Adjust operating expenses for personal share.
4. Correctly complete the Summary of Farm Operating Expenses.

## Operating expenses: The year's total

The Summary of Farm Operating Expenses is completed to determine the **total** operating expenses for the year. All expenses for the year *except capital purchases* must be totaled and recorded in this summary. This includes data from the following records: Farm Operating Expenses, Summary of Wages Paid, Summary of Social Security Liability, Farm Interest and Debt Payment, and farm operating expenses due to Milk Sales.

Transferring totals from the five records is a straightforward process. There are, however, some operating expenses that are partially farm expenses and partially personal expenses. Can you think of three such expenses? Name them.

1. _____

2. _____

3. _____

The *Cornell Farm Account Book* is for recording only farm receipts and expenses. Expenses that are shared by both the farm business and the owner's household must be adjusted to determine the _____ share and the _____ share of these expenses. The personal share is **subtracted** from the total cost so that only the farm share is included in the farm operating expenses.

Assume the year-end total for electricity is $1,000. If 20% of the electricity is used in the owner's home, what is the adjusted farm share?_____

## How to summarize farm operating expenses

1. Forward the farm operating expenses total for the year from Unit 2. Record the amounts in columns 1 through 20.
2. Complete the *adjustment* section using the sample entries.
   a. Multiply the percent personal share by the total cost.
   b. Enter this amount in column 1 and the column for the expense. (For example: Auto share is entered in columns 1 and 6.)
   c. Transfer the cost of milk hauling, farm supplies, compensation and business insurance, and milk promotion and cooperative dues from the Milk Sales section, Unit 6.
3. Add the value of **all** adjustments to the *totals for year,* and enter the figure as *totals adjusted.* (Note that the personal share is a **negative** amount.)
4. From the Summary of Wages Paid, Unit 3, forward the amount of *cash wages and value of board.*
5. From the Summary of Social Security Liability, Unit 3, forward the total amount of *Social Security* paid for the year.
6. From Unit 4, Farm Interest and Debt Payment, forward the *interest paid last year* as recorded on the Annual Mortgage Statement.
7. Add these last three expenses to the *totals adjusted* to determine the *total farm operating expenses.*

# Unit 10

# Summary of Farm Operating Expenses

## Sample entries

**Personal share of expenses:**

**20% for auto**
**20% for electricity**
**50% for telephone**

**To complete summary, use data from Units 2, 3, 4, and 6.**

**SUMMARY OF FARM OPERATING EXPENSES**

| | | 1 Enter all items in this column | 2 Feed bought | 3 Feed bought | 4 Machine hire | 5 Truck, tractor and other machine expense | 6 Auto expense | 7 Gasoline and oil | 8 Breeding fees |
|---|---|---|---|---|---|---|---|---|---|
| | **Totals for year** or total to date from page 4 + 5 | | | | | | | | |
| **Adjustments** | Less personal share of auto % per sh. X $ = | – | | | | | – $ | | |
| | Less personal share of electricity % per sh. X $ = | – | | | | | | | |
| | Less personal share of telephone % per sh. X $ = | – | | | | | | | |
| | Milk hauling from page 24 | | | | $ | | | | |
| | Farm supplies from page 24 | | | | | | | | |
| | Comp. & bus. ins. from page 24 | | | | | | | | |
| | Milk promotion & Coop dues from page 24 | | | | | | | | |
| | **Totals adjusted** | | | | | | | | |
| **Additions** | Cash wages & value of board from page 13 | | | | | | | | |
| | Social Security from page 14 | | | | | | | | |
| | Interest from page 17 | | | | | | | | |
| | **Total Farm Operating Expenses** | | | | | | | | |

**SUMMARY OF FARM OPERATING EXPENSES** (Continued)

| 9 Veterinary and medicine | 10 Other livestock expense | 11 Lime and fertilizer | 12 Seeds and plants | 13 Spray and other crop expense | 14 Land, building, and fence repair | 15 Taxes | 16 Insurance | 17 Electricity | 18 Telephone | 19 | 20 Miscellaneous |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | – $ | – $ | | |
| | $ | | | | | | $ | | | | $ |

# Unit 11

# Summary of Farm Inventory and Farm Net Worth

## Objectives

At the completion of this unit, the student will be able to:

1. Enter inventory totals on the correct lines in the Summary of Farm Inventory and Farm Net Worth of the *Cornell Farm Account Book.*
2. Determine any increases or decreases in livestock inventory and feed and supply inventory, when given the beginning- and end-of-year inventory totals.
3. Correctly compute farm net worth (equity capital).
4. Define interest on farm net worth.
5. Correctly compute the interest on farm net worth when given the current interest rate and farm net worth.

## How do previous years' transactions affect this year's income?

Through units 1 through 10, we have been concerned with business transactions of the **current year.** In this unit, we are concerned with this year's transaction *and* also with how the **previous** years' transactions affect the farm's income. The affect of all accumulated assets and liabilities on this year's income is determined on the Summary of Farm Inventory and Farm Net Worth section of the account book.

## Definition of terms

There are four new terms used in this unit: assets, liabilities, net worth, and interest on farm net worth. Each one must be fully understood before completing the summary.

A farm **asset** is anything that the farm business **owns** that has a commercial value at the time inventory is taken. List four examples of a farm asset.

1. _____
2. _____
3. _____
4. _____

Your list of assets should include items such as livestock, feed and supplies, machinery, equipment, and land. These are also items that the farmer owns and could sell for cash at anytime.

A farm **liability** is the opposite of an asset. Liabilities are sums of money the farmer **owes** to people or businesses. Liabilities are debts. List two examples of a farm liability.

1. _____
2. _____

According to the above definitions, livestock that a farmer owns is a/an _____, and the mortgage on the farm is a/an _____.

If the farmer were to sell everything (assets) and pay all the debts (liabilities) what would be left? **The farm net worth.** The farm net worth is the total assets less the total farm liabilities. Farm net worth is also called **equity capital.**

Farm net worth (equity capital) = total assets − total liabilites

The final calculation for the summary is the **interest on farm net worth.** This interest is a noncash expense of the farm business. The interest on farm net worth represents what the farm owner-operator might have earned if he/she had invested his/her money (equity capital) in something other than farming. For example, if a farmer sold all of her/his assets, paid off the liabilities, and invested the money (equity capital) in a bank, the investment would earn interest. By investing the money in the farm business instead, the farmer is sacrificing this interest. Thus, this interest (interest on farm net worth) is considered a farm **expense.**

The current interest rate being used is 7%.

Farm net worth × .07 = interest on farm net worth

# Unit 11

# Summary of Farm Inventory and Farm Net Worth

## How to complete the summary of farm inventory and farm net worth

1. Enter the *beginning* and *end* of the year inventories for *cattle, feed and supplies, machinery and equipment,* and *land and buildings.*
2. Enter the difference in year-end inventories for *cattle* and *feed and supplies* under the column titled *increase or decrease.* If the inventories have increased over the year, put a plus (+) sign before the amount of the increase. If the inventories have decreased, put a minus (−) sign before the amount.
3. Add the year-end inventories and enter this amount on the line titled *total farm inventories.*
4. Enter the value of any other farm assets.
5. Add this amount to the total farm inventories to determine *total farm assets.*
6. Enter the *total farm liabilities* on the next line.
7. Subtract this value from the total farm assets to determine the *farm net worth* (equity capital) for the beginning of year and end of year.
8. Compute and enter the *average farm net worth.* The average farm net worth is the sum of the beginning- and end-of-year net worth divided by 2.
9. Compute the interest on average farm net worth by multiplying the *average farm net worth* by 7% (.07). Enter this amount on the line titled *interest on ave. farm net worth.*

## Sample entries

| | Beginning of the year | End of the year |
|---|---|---|
| cattle | $ 43,800 | $ 49,600 |
| feed and supplies | 19,300 | 29,300 |
| machinery and equipment | 42,900 | 56,100 |
| land and buildings | 104,800 | 122,400 |
| other farm assets | 8,800 | 6,600 |
| total farm liabilities | 66,900 | 70,500 |

The owner-operator would find these figures in the farm's inventory records.

SUMMARY OF FARM INVENTORY AND FARM NET WORTH

Enter from your Cornell Farm Inventory Book totals for beginning and end of current year.

| Item | From Page | Beginning of year | End of year | Increase or decrease |
|---|---|---|---|---|
| Cattle | 38 | $ | $ | $ to page 42 |
| Other livestock | | | | to page 42 |
| Feed and supply | 38 | | | to page 42 |
| Machinery and equipment | 38 | | | } to page 39 |
| Land and buildings | 38 | | | |
| Total farm inventories | | $ | $ | |
| Other farm assets | 38 | | | |
| Total farm assets | 38 | | | |
| Total farm liabilities | 38 | | | |
| Farm net worth | 38 | $ | $ | $ |
| Average farm net worth | | $ | | |
| Interest on ave. farm net worth (owned capital), % X $ | | $ | to page 42 | |

# Objectives

At the completion of this unit, the student will be able to:

1. Correctly compute the net depreciation values for machinery and equipment and land and buildings.

# Depreciation: How much less is it worth?

In Unit 5, Capital Expenses, depreciation was defined as the **decrease in value** of an item owing to causes such as wear, tear, and outdatedness. The amount that each piece of equipment and machinery, land, and buildings decreased in value during the year is recorded as a farm business expense for the year.

To calculate the amount of depreciation, the owner-operator must compare the *end-of-year inventory* to the *beginning-of-year inventory.*

# How to calculate depreciation

1. Forward from the Summary of Farm Inventory and Farm Net Worth (Unit 11) the beginning- and end-of-year inventories for *machinery and equipment* and *land and buildings.*
2. Forward from the Capital Purchases and Improvements (Unit 5) the total values of *new machinery and equipment* and *new real estate.*
3. Add the value of the new items to the beginning inventories. Enter the amount as *total beginning and new.*
4. Forward from Miscellaneous Receipts (Unit 9) the total value of *machinery and equipment sold* and *land and buildings sold.*
5. Add the value of the items sold to the end inventories. Enter the amount as *total end and sold.*
6. Subtract the *total end and sold* from the *total beginning and new* for both *machinery and equipment* and *land and buildings.* Enter this figure as the amount of *depreciation.*

CALCULATION OF DEPRECIATION

| Machinery and Equipment | | | Land and Buildings | | |
|---|---|---|---|---|---|
| Beginning inventory | $ | | Beginning inventory | $ | |
| New machinery and equip. from page ___ | | | New real estate from page ___ | | |
| Total beginning and new | | $ | Total beginning and new | | $ |
| End inventory | $ | | End inventory | $ | |
| Machinery and equip. sold from page ___ | | | Land & buildings sold from page ___ | | |
| Total end and sold | | $ | Total end and sold | | $ |
| Machinery and equipment depreciation (Total beginning and new less total end and sold) | | $ to page ___ | Real estate depreciation (Total beginning and new less total end and sold) | | $ to pg. 42 |



# Unit 12

# Calculation of Depreciation

# Unit 13

# Summary of Farm Receipts and Expenses

## Objectives

At the completion of this unit, the student will be able to:

1. Forward data from all available expense and receipt records to the correct space on the Summary of Farm Receipts and Expenses.
2. Calculate the total farm receipts and total farm income using available data.
3. Calculate the farm income when given the total farm receipts and expenses.
4. Calculate the labor and management income when given the farm income and the interest on farm net worth.

## Income and expenses: Putting it all together

In this unit you will determine if the farm had a *profit* or a *loss*. All the dollar values that you entered in the preceding units will be transferred to this summary section. Using the values, you will calculate **two measures of profit:** farm income and labor and management income. Farm income is simply the total farm receipts less the total farm expenses. Labor and Management Income is the financial return to a farm operator for his/her labor and management skills. It is calculated by subtracting the interest on average farm net worth from the farm income. If there is more than one operator, you should divide the farm labor and management income by the number of operators.

**Complete the following:**

total receipts minus total expenses =

_____

farm income minus interest on average net worth =

_____

Unpaid family labor is included as an expense when summarizing the year's expenses and receipts. If no money was paid to family members working on the farm, why is unpaid family labor included as an expense?

_____

_____

_____

An increase in *cattle and livestock* and/or *feed and supplies* inventories is entered as a business receipt. A decrease in these inventories is entered as an expense. Why is the decrease in value of a farm's livestock considered an **expense** to the business?

_____

_____

_____

## How to summarize farm receipts and expenses

1. To complete all spaces in the first column of the Summary, forward from the Summary of Operating Expenses (Unit 10) the adjusted totals for columns 2–20, *cash wages paid, Social Security paid on labor,* and *interest paid.*
2. Add all operating expenses, and enter the amount on the bottom line, titled *total farm operating expense.* (This figure should equal the total recorded in Unit 10.)
3. Forward the *total farm operating expense* to the next column.
4. On line 2, enter the amount for *cattle and livestock purchased* from Unit 5.
5. On line 3, enter the amount for *machinery and equipment depreciation* from Unit 12.

# Unit 13

# Summary of Farm Receipts and Expenses

6. On line 4, enter the amount for *real estate depreciation* from Unit 12.
7. From the Summary of Farm Inventory and Farm Net Worth (Unit 11), forward the amount by which inventory changed. If there was a *decrease* in cattle and livestock inventory or feed and supply inventory, enter the decrease on lines 5 and 6. If there was an *increase* in these inventories, enter the increase on lines 16 and 17.
8. Upaid family labor is included as an expense to allow valid comparisons between farms with no unpaid family labor, such as this one, and farms that have a significant amount of unpaid family labor. Estimate the value of *unpaid family labor* and enter it on line 7.
9. Add all expenses (lines 1–7), and enter the *total farm expense* on line 8.
10. Complete lines 9–15 by referring back to the appropriate units and forwarding the year's totals for each one.
11. Add all receipts (lines 9–17), and enter the *total farm receipts* on line 18.
12. Forward the *total farm expenses* from line 8 to 19.
13. Subtract total expenses from total receipts to determine *farm income*. Enter this amount on line 20.
14. Forward to line 21 the *interest on average farm net worth* for the year from Unit 11.
15. Subtract the interest from farm income to determine the *labor and management income*. Enter the value on line 22.
16. Divide the labor and management income by the number of operators. Enter the value on line 23.

SUMMARY OF FARM RECEIPTS AND EXPENSES

| Operating Expenses | Items from page | Amount | | Expenses and Receipts | Items from page | Amount | |
|---|---|---|---|---|---|---|---|
| Cash wages paid (include value of board) | 36 | $ | | 1. **Total Farm Operating Expense** | | $ | |
| Social Security paid on labor | 36 | | | 2. Cattle and other livestock purchased | 21 | | |
| Feed bought | 36 | | | 3. Machinery and equipment depreciation | 39 | | |
| Feed bought | 36 | | | 4. Real estate depreciation | 39 | | |
| Machine hire (include milk hauling) | 36 | | | 5. Decrease in cattle & livestock inventory | 38 | | |
| Truck, tractor, machine exp. | 36 | | | 6. Decrease in feed & supply inventory | 38 | | |
| Auto expense (farm share) | 36 | | | 7. Unpaid family labor (mo. ) | | | |
| Gasoline and oil | 36 | | | 8. **Total Farm Expenses** | | | |
| Breeding fees | 36 | | | 9. Milk sales | 24 | | |
| Veterinary and medicine | 36 | | | 10. Crop sales | 27 | | |
| Other livestock expense | 36 | | | 11. Livestock sold | 31 | | |
| Lime and fertilizer | 36 | | | 12. Misc. receipts: Refunds & dividends | 34 | | |
| Seeds and plants | 36 | | | 13. Govt. payments | 34 | | |
| Spray, other crop expense | 36 | | | 14. Work off farm | 34 | | |
| Land, building, fence repair | 36 | | | 15. Other | 34 | | |
| Taxes | 36 | | | 16. Increase in cattle & livestock inventory | 38 | | |
| Insurance | 36 | | | 17. Increase in feed & supply inventory | 38 | | |
| Electricity (farm share) | 36 | | | 18. **Total Farm Receipts** | | | |
| Telephone (farm share) | 36 | | | 19. **Total Farm Expenses** | | | |
| | 36 | | | 20. Farm income | | | |
| Interest paid* | 36 | | | 21. Interest on average farm net worth | 38 | | |
| Miscellaneous | 36 | | | 22. **Labor income** | | | |
| **Total Farm Operating Expense** | | | | 23. Labor income per operator | | | |

# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

## Objectives

At the completion of this unit, the student will be able to:

1. Define the terms *work unit* and *man equivalent.*
2. Calculate the number of work units needed to grow a crop by referring to the Summary of Livestock, Crops, and Labor (page 57, *Cornell Farm Account Book*).
3. Calculate the number of man equivalents when given the number of months of work for the farm's labor force.
4. Enter provided data and correctly complete the Summary of Livestock, Crops, and Labor.
5. Transfer data from a completed Summary of Livestock, Crops and Labor to the Farm Business Chart.
6. When given a farm's crop yield, state how the farm's production compares with other farms in New York according to the Cornell University Farm Business Chart.

## How does your farm compare with others?

To answer this question, first you must take a close look at your farm business.

Every business manager should know whether his/her enterprise is producing at its maximum level. The farmer is no exception. If her/his farm is not producing at its maximum potential, the farmer must identify where the weakness lies:

- Should a different crop be planted?
- Are the crop production rates too low? If so, why?
- Are the livestock production rates too low? If so, why?
- Is the farm too small or too large for the business?
- Do the workers accomplish their tasks in a reasonable amount of time?

How does the farmer know if the farm's production is low, high, or average?

The Farm Business Chart allows farmers to compare information about their farm with other farms — such information as production per cow, production per acre, and work accomplished per employee. The Summary of Livestock, Crops, and Labor is designed to help the farmer compute this information. It lists the standard amount of time required to complete a job, such as produce one acre of hay or manage one producing dairy cow. To compare farms that differ in size and labor force, all data is converted to **work units** and **man equivalents.**

A work unit is the amount of work a person will accomplish in a **10-hour day** given average farm conditions and usual farm tasks.

On the Summary page, look at the section titled *Work Units for Livestock and Crops.* Under the heading *Livestock, dairy cows* is listed. Note in the first line a number 7 under the column heading *work units per head or per acre.* This is the average number of work units needed to care for one dairy cow over a period of one year. The 7 work units are equal to _____ hours of work.

Continue down the column on the left side of the page and answer the following questions.

1. How many work units are needed to grow 1 acre of hay?_____
2. How many hours would this be? _____

Man equivalent is also a unit of measure used to compare farms.

A man equivalent is **12 months** of full-time employment of one person; 230 hours of part-time or seasonal labor is considered equal to 1 month of full-time employment. **All** labor used on the farm must be included when calculating total man equivalents. Which category of labor listed on the summary page under *man equivalent* is not included in the labor expense unit? _____

Why isn't this category of labor included in the labor expense unit?_____

_____

# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

## Sample problems in computing man equivalents

1. If a farm had two full-time workers, an owner-operator, and an additional 6 months of full-time seasonal labor, how many man equivalents would this firm have?_____

   (Remember: 1 man-equivalent = 12 months full-time work)

| Worker | Full-time months |
|---|---|
| owner | _____ |
| two workers | _____ |
| seasonal labor | _____ |
| total months | _____ |

$$\frac{1 \text{ man-equivalent}}{12 \text{ months}} \times \text{____ months} = \text{____man-equivalent}$$

2. If the owner in problem 1 had two of his/her children working without pay for a total of 10 months per year, how many man equivalents would this farm have?

| Worker | Full-time months |
|---|---|

## How to complete the summary of labor requirements for livestock and crops

1. Using sample entries, enter the number of head of livestock raised and the number of acres of each crop grown under *number of acres on this farm.*
2. For each type of livestock raised, multiply the *number of head* by the *work units per head* to determine the *total work units.* Enter this figure in the space provided.
3. For each crop grown, multiply the *number of acres* by the *work units per acre* to determine the *total work units.* Enter this figure in the space provided.
4. Add the column of total work units for each type of livestock and crop, and enter the figure at the bottom of the page, *TOTAL WORK UNITS.*
5. For each crop, enter the *yield per acre.* Multiply the number of acres by the yield per acre to determine the *total crop.*
6. Compute the number of *full-time months* for this farm. Use the data from Unit 3 for Bill Jones, Laura Brown, and Carol Smith. Remember: 230 hours is considered equal to one month of full-time employment.
7. Enter the full-time months for the owner-operator and each employee under *Man Equivalent.*
8. Calculate the total full-time months and divide it by 12 to determine the number of *man equivalents* for the farm.
9. Divide the *total work units* by the *man equivalent.* Enter the figure in the box titled *work units per man.*
10. To complete the section at the bottom of the summary, forward the *total pounds of milk sold* from the Milk Sales record, Unit 6.
11. Transfer the *number of cows* and *man equivalent* from above the line and complete the calculations.

## Sample entries

| Livestock | | Number of head |
|---|---|---|
| Cows | | 53 |
| Heifers (calves) | | 33 |
| **Crops** | **Acreage** | **Yields/Acre** |
| Hay | 73 | 2.4 tons |
| Corn silage | 35 | 14 tons |
| Corn for grain | 20 | 98 bushels |
| Wheat | 10 | 46 bushels |

## How to use the Farm Business chart

1. Read the directions given at the bottom of the Farm Business Chart (page 48).
2. Transfer information from the Summary of Livestock, Crops, and Labor to the chart. For example: If the tons of hay produced per acre is 2.4, the entry on the chart would be:

| Tons of Hay |
|---|
| 3.8 |
| 3.0 |
| 2.7 |
| 2.2 |
| 2.1 |
| 1.9 |
| 1.7 |
| 1.5 |
| 1.2 |

(Note that page 47 provides a list of labor requirements — work units — for enterprises not listed in the summary.)

3. Identify the strengths and weaknesses of this farm business.



# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

Summary of Livestock, Crops and Labor

## WORK UNITS FOR LIVESTOCK AND CROPS

| | Number or acres on this farm | | Work units per head or per acre | | Total work units |
|---|---|---|---|---|---|
| **LIVESTOCK** | | | | | |
| Dairy Cows | | × | 7 | = | |
| Beef Cows | | × | 2 | = | |
| Heifers | | × | 2 | = | |
| Hens (production only) | | × | 0.04 | = | |
| Pullets raised | | × | 0.002 | = | |
| Brood sows | | × | 3 | = | |
| Hogs raised | | × | 0.15 | = | |
| Ewes | | × | 0.5 | = | |
| | | × | | = | |
| **CROPS** | | | | | |
| Hay | | × | 0.8 | = | |
| | | × | | = | |
| Corn Silage | | × | 0.8 | = | |
| Corn for grain | | × | 0.6 | = | |
| Oats | | × | 0.6 | = | |
| Wheat | | × | 0.6 | = | |
| | | × | | = | |
| | | × | | = | |
| Dry beans | | × | 1.5 | = | |
| Potatoes | | × | 6 | = | |
| Cabbage | | × | 9 | = | |
| Snap beans for processing | | × | 1 | = | |
| Onions | | × | 12 | = | |
| | | × | | = | |
| | | × | | = | |
| Apples–growing | | × | 4 | = | |
| Apples–harvest–per bushel | | × | 0.02 | = | |
| **OTHER** | | | | | |
| Work off farm, days | | × | 1 | = | |
| Marketing | | × | | = | |
| | | × | | = | |

TOTAL WORK UNITS

## MAN EQUIVALENT

| Workers | Full-Time Months |
|---|---|
| Operator(s) | |
| Family (paid) | |
| Family (unpaid) | |
| Hired men | |
| Other | |
| Total | |
| Man equivalent (Total ÷ 12) | |

| Yield per acre | Total Crop | |
|---|---|---|
| | | tons |
| | | tons |
| | | tons |
| | | bu. |
| | | bu. |
| | | bu. |
| | | |
| | | |
| | | lbs. |
| | | cwt. |
| | | tons |
| | | tons |
| | | cwt. |
| | | |
| | | |
| | | bu. |

## WORK UNITS PER MAN

(Total work units ÷ man equivalent)

| | | | | | |
|---|---|---|---|---|---|
| Total pounds of milk sold | | ÷ no. of cows | | = | pounds of milk sold per cow |
| Total pounds of milk sold | | ÷ man equivalent | | = | pounds of milk sold per man |
| Number of cows | | ÷ man equivalent | | = | cows per man |

# Productive Man Work Units*

A productive man work unit is the average amount of productive work accomplished in **10 hours.** The total number of work units on a farm represents the number of 10-hour units of time that would be required, under average conditions, to care for the acreage of crops grown and the number of livestock kept.

The number of productive man work units on a farm is calculated by multiplying the acres or amount of each crop and the number of each kind of animal by units that have been caculated on the basis of the average amount of time required to handle one acre or one animal.

Units for the most common livestock and crops in New York are given in the summary on page 46. Units for some other enterprises are given below. For enterprises not listed, estimate the labor requirements.

**Vegetables for processing**
(work units per acre)

| | |
|---|---|
| Lima beans | 2 |
| Beets | 5 |
| Broccoli | 10 |
| Carrots | 10 |
| Sweet corn | |
| Growing | 1 |
| Harvesting | 1 |
| Peas | 1 |
| Spinach | 2 |
| Tomatoes | 12 |

*This sheet supplements the information given in the Summary of Livestock, Crops, and Labor.

**Forest products**
(work units per quantity listed)

| | |
|---|---|
| 1000 board feet of logs | 1 |
| 100 fence posts | 1.5 |
| 1 cord pulpwood | 1 |
| 1 standard cord of fuelwood in 4 foot lengths | 1 |
| 1 standard cord of fuelwood cut to stovewood length (3 to 3 1/2 cords stovewood) | 1.5 |
| 1 gallon maple syrup | 0.15 |

**Vegetables for fresh market**
(work units per acre)

| | |
|---|---|
| Snap beans (hand harvested) | 15 |
| Cauliflower | 18 |
| Celery | 20 |
| Sweet corn | 4 |
| Cucumbers | 10 |
| Lettuce | 10 |
| Melons | 10 |
| Squash | 10 |
| Tomatoes | 20 |

**Fruit**
(work units per acre)

| CROP | GROWING | HARVESTING |
|---|---|---|
| Cherries | 2 | 3 per ton |
| Grapes for processing | 7 | 0.5 per ton |
| Table grapes | 7 | 1.5 per ton |
| Peaches | 5 | 4 per 100 bu. |
| Pears | 3 | 2 per 100 bu. |
| Plums, prunes | 3 | 4 per 100 bu. |
| Raspberries | 10 | 2 per 100 qts. |
| Strawberries | 20 | 1 per 100 qts. |



# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

# Unit 14

# Labor Requirements for Livestock and Crops and the Farm Business Chart

## FARM BUSINESS CHART

Success in farming is the result of many factors. Farm business studies show that the most important factors under the farmer's control are size of business, production rates of crops and animals, labor efficiency and selection of enterprises.

The chart below shows the range of the experience of commercial farmers in New York with respect to size of business, production rates and labor efficiency.

The figure at the top of each column is the median of the highest ten per cent of the farms in that factor. For example, the figure 3.8 at the top of the column headed "Tons of Hay" is the median of the ten per cent of the farms with the highest yield of hay. The other figures in the column are the medians for "the next best 10 per cent," "the 10 per cent below that," and so forth. The figure 1.2 at the bottom of the column is the median of the ten per cent of the farms with the lowest yield of hay.

Each of the columns is independent of the others. The figure 22 at the top of the column headed "Tons of Corn Silage" is the median of the ten per cent of the farms with the highest yield of corn silage.

| Hay, Silage, Grain Yields per Acre | | | | | Vegetable Yields per Acre | | | | | | | Fruit Yields per Acre | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tons of Hay | Tons of Corn Silage | Bu. of Corn | Bu. of Oats | Bu. of Wheat | Lbs. of Dry Beans | Cwt. of Potatoes | Tons of Cabbage | Cwt. of Onions | Tons of Tomatoes | Net Tons of Sweet Corn | Tons of Snap Beans | Bu. of Apples | Bu. of Pears | Tons of Grapes | Tons of Sour Cherries |
| 3.8 | 22 | 125 | 95 | 58 | 2,300 | 340 | 33 | 470 | 23 | 7.5 | 3.0 | 550 | 330 | 7.5 | 6.6 |
| 3.0 | 19 | 105 | 83 | 52 | 1,900 | 305 | 28 | 410 | 19 | 6.6 | 2.7 | 490 | 280 | 6.0 | 5.1 |
| 2.7 | 17 | 95 | 73 | 47 | 1,700 | 285 | 25 | 370 | 17 | 5.9 | 2.5 | 440 | 230 | 5.5 | 4.1 |
| 2.4 | 16 | 88 | 67 | 44 | 1,500 | 265 | 22 | 345 | 15 | 5.5 | 2.3 | 400 | 200 | 5.0 | 3.5 |
| 2.2 | 15 | 82 | 62 | 41 | 1,300 | 250 | 20 | 320 | 14 | 5.2 | 2.1 | 365 | 180 | 4.6 | 3.1 |
| 2.1 | 14 | 78 | 58 | 39 | 1,100 | 240 | 18 | 300 | 13 | 5.0 | 2.0 | 335 | 160 | 4.2 | 2.8 |
| 1.9 | 13 | 70 | 54 | 37 | 1,000 | 225 | 16 | 280 | 12 | 4.7 | 1.9 | 305 | 140 | 3.8 | 2.5 |
| 1.7 | 12 | 60 | 50 | 34 | 900 | 205 | 14 | 250 | 11 | 4.2 | 1.7 | 270 | 120 | 3.4 | 2.1 |
| 1.5 | 11 | 50 | 45 | 30 | 800 | 185 | 12 | 220 | 10 | 3.6 | 1.5 | 230 | 100 | 3.0 | 1.7 |
| 1.2 | 8 | 35 | 35 | 25 | 600 | 150 | 10 | 170 | 9 | 3.0 | 1.3 | 190 | 70 | 2.5 | 1.3 |

| Dairy Farms | | | | Labor | | | Poultry Farms | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of Cows | Pounds of Milk Sold | Pounds Milk Sold per Cow | Cows per Man | Pounds of Milk Sold per Man | Total Work Units | Man Equivalent | Work Units per Man | Number of Hens | Eggs Sold per Hen | Hens per Man | Dozens of Eggs Sold per Man | Pounds Feed per Dozen Eggs |
| 100 | 1,100,000 | 15,000 | 40 | 515,000 | 1,000 | 3.5 | 420 | 75,000 | 250 | 12,000 | 245,000 | 3.8 |
| 65 | 700,000 | 12,900 | 34 | 385,000 | 720 | 2.7 | 340 | 35,000 | 240 | 9,500 | 180,000 | 4.1 |
| 52 | 560,000 | 11,800 | 30 | 325,000 | 590 | 2.3 | 310 | 25,000 | 235 | 7,500 | 130,000 | 4.4 |
| 43 | 470,000 | 11,100 | 26 | 280,000 | 520 | 2.0 | 290 | 18,000 | 230 | 6,000 | 105,000 | 4.5 |
| 40 | 415,000 | 10,400 | 24 | 245,000 | 460 | 1.8 | 270 | 12,000 | 225 | 5,000 | 90,000 | 4.6 |
| 37 | 365,000 | 9,800 | 22 | 220,000 | 430 | 1.6 | 250 | 9,500 | 220 | 4,000 | 80,000 | 4.7 |
| 33 | 325,000 | 9,200 | 21 | 200,000 | 390 | 1.4 | 230 | 7,000 | 215 | 3,500 | 70,000 | 4.8 |
| 29 | 275,000 | 8,400 | 20 | 185,000 | 350 | 1.3 | 210 | 5,200 | 210 | 3,000 | 60,000 | 5.0 |
| 25 | 220,000 | 7,600 | 18 | 170,000 | 310 | 1.2 | 190 | 4,000 | 205 | 2,500 | 50,000 | 5.2 |
| 20 | 160,000 | 6,500 | 15 | 130,000 | 250 | 1.0 | 160 | 3,000 | 195 | 2,000 | 40,000 | 5.6 |

### HOW TO USE THIS CHART

Draw lines in each column to show the rank of the farm business being studied. For example, if the farm produced 57 bushels of oats per acre draw a line in the "oats" column between 56 and 60.

Draw heavy lines so that you can see them easily.
Do not draw lines for factors which are of only minor importance on the farm being studied.

# Unit 15

# Electronic Accounting Programs

## Objectives

At the completion of this unit, the student will be able to:

1. List five computerized farm accounting programs available in New York State.
2. State one advantage and one disadvantage of a computerized accounting program compared with a manual accounting program.

## Electronic accounting programs: An alternative

We are well into the age of computers. These machines have made radical changes in business operation, management, and the processing of information. Their application to farm businesses has been taking place for many years.

One of the first computerized systems available to farmers was an electronic farm accounting program. The basic program is a monthly mail-in system: at the end of each month each farmer mails in all business transactions. The information is coded and fed into a computer. The results of the computer's calculations are printed in a summary form and are mailed back to the farm operator.

There are two primary **advantages** to computerized accounting programs. (1) Since you pay for the service, there is greater incentive to record transactions and mail information on time. In a sense, you are forcing yourself to keep accurate, up-to-date records. (2) The systems give you a monthly comparison of the year's receipts and expenses to date with those of last year.

Most electronic accounting programs include more in their base programs than the monthly summary of transactions. Services such as income tax information, consultation on business affairs, farm visits, and checkbook services are included. For an additional fee (above the cost of the base program) a farm owner can receive options such as depreciation schedules, labor summaries, household accounts, and income tax returns. The advantage is that calculations are made automatically, so the farmer receives information which she/he may not have taken time to calculate.

The sole **disadvantage** of the electronic accounting program is the cost. Many feel that this disadvantage is offset by the fact that farm operators take record keeping more seriously because of the fees. The chart on the following page compares the different electronic accounting programs available to farmers in New York State.

Electronic farm accounting programs provide families with useful management information. However, to be able to use this information, the family must understand the basic concepts of record keeping, as taught in relation to the use of the *Cornell Farm Account Book* system.

# Unit 15

# Electronic Accounting Programs

## Computerized Farm Accounting Programs Operating in the Northeast, 1976–1977

| Accounting system | Basic program emphasis | Extras or options | Annual fees | Cooperation or coordination |
|---|---|---|---|---|
| **AGRIPAX** (Farm Credit System) | Business management; management counseling; tax service; monthly mail-in | Office coding; payroll record; enterprise coding; cash flow; depreciation schedule; proving to bank balance; taxes | $250 up depending on size of business (income or cows) and extra options | Farm Credit managers and county extension agents |
| **PROFILE** (Agway) | Monthly mail-in; also account book & check system; tax service; consulting on business affairs | Consulting service; income tax returns; estate planning; 3 visits & pick up information for tax purposes | $436, average $326–750 range | Field representatives |
| **CAMIS** (Cornell) | Monthly mail-in; farm business management decision making | No extra cost for: Cash flow, business analysis, labor summary, credit accounts, household account, depreciation schedule, income tax work sheet, etc. | $175–275 depending on size of business; discount if records kept up to date | County extension agents and college personnel |
| **Farm Bureau** | Tax work; monthly mail-in; also account book and checkbook system; may include farm visits | Extra fee for: financial management; cash flow; income tax return; farm visits | $250–700 tax returns; $25 extra; plus $7 for each schedule; farm visits at $15/hour; office visits $12/hour; amended tax return $25. | Field representatives |
| **ELFAC** (New England) | Monthly mail-in; farm business management | Depreciation schedule & investment credit; tax work sheet | $35 for 35 cows, then $1.50 per cow; $20 for depreciation and investment credit schedules | County and state extension personnel |
| **P.S.U.** (Penn State) | Monthly mail-in; farm business analysis; no tax service | Extra fee for entry pages beyond base, quarterly statement and monthly cash flow | $150–250 | Extension specialists and college personnel |

**allowance** — a good or service given to the worker as partial payment of wages, the value of which is included when computing minimum wage

**amortization** — the repayment of a debt by installments which usually include payments on both the principal and the interest

**asset** — anything owned that has a commercial value at the time inventory is taken; the opposite of liability

**average net worth** — the sum of the beginning of the year and end of the year net worth divided by 2

**board** — meals

**boot money** — the difference between the cost of a new item and the value of the trade-in

**capital expense** — the cost of an item that has an expected useful life of more than one year

**capital item** — a good devoted to the production of other goods

**Cornell Farm Account Book** — a manual record of all expenses and receipts of a farm business

**decreasing payment plan** — the repayment of a loan whereby a set portion of the principal is paid on each installment date along with the interest charge on the unpaid balance of the principal

**deduction** — a part of the gross cash wage held back by the employer for a specific purpose

**depreciation** — the amount an item decreases in value due to causes such as wear, tear, and outdatedness; a farm business expense

**electronic accounting program** — a computerized system of keeping a record of expenses and receipts and summarizing data

**equal payment plan** — the repayment of a loan whereby an equal amount is paid on each installment date; the amount of principal and interest change with each payment

**farm business chart** — a device prepared to allow comparison of farms

**farm income** — a measure of profit; the total farm receipts less the total farm expenses

**gross cash wage** — the cash wage paid plus value of deductions

**interest charge** — the rent paid for the use of money; one part of a loan installment; an operating expense

**interest on farm net worth** — the amount of money that might have been earned if the amount of net worth was invested in something other than farming

**labor and management income** — a measure of profit; the financial return to the farm operator for his/her labor and management skills; the farm income minus the interest on average farm net worth

**labor cost** — an operating expense paid for services rendered

**liability** — a sum of money that is owed; a debt; the opposite of asset

**loan payments** — money paid on a debt, consisting of an amount paid to reduce the principal plus an interest charge on the unpaid balance of the loan

**man equivalent** — a unit of measure that equals 12 months of full-time employment of one person; a unit computed to measure the production efficiency of a farm business

**management** — the ability to make good use of your resources — money, labor, machinery, animals, and land

**miscellaneous receipts** — money received for items other than the primary produce of the farm, such as milk, crops, or livestock

**mortgage** — a pledge of property as security on a debt

**net worth** — the value of total assets less the value of total liabilities; equity capital

**operating expense** — the cost of an item purchased for the business that (1) has an expected useful life of less than one year or (2) has an initial cost of less than $100

**principal payment** — the part of the loan installment that goes toward paying off the original amount of money borrowed

**receipt** — cash received from the sale of an item

**regular labor** — labor (full-time or part-time) hired on a continuous basis throughout the year

**seasonal labor** — labor that is hired for a few days or few weeks during the year

**Social Security** — a program whereby the government holds money to be paid to a person in regular checks when the person retires or is disabled



# Glossary

# Glossary

**work unit** — the amount of work a person will accomplish in a 10-hour day given average farm conditions and usual farm tasks; computed to measure the production efficiency of a farm business